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CLASSIFICATION OF ELEMENTS OF THE LATEST DIGITAL FINANCIAL TECHNOLOGY

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Abstract: Today we can state that these technologies have created the basis for the formation of a fundamentally new environment of legal regulation, penetrating into a wide variety of areas of human activity. And such a new technological environment based on digital technologies significantly affects various spheres of life, such as financial, political, social, and other. The influence of the modern "digital revolution" began to extend to the formation of the relevant norms of national legislation, which led to the adoption of the Law of Ukraine "On Virtual Assets". The purpose of the article is to develop a study aimed at trying to form a classification of the latest elements of digital technologies that have more found their application in the financial sector of the economy and have the common well-known name "cryptocurrency" and adopted in domestic legislation the expression "virtual assets" with the adoption of the Law of Ukraine "On Virtual Assets". In the study, we call them digital financial technology. And to form their general classification, on the basis of their inherent characteristic features. The purpose of the article is not how much to present the classification of virtual assets proposed in the Law Ukraine "On Virtual Assets", as in the presentation on the background of their existing alternative classification. During the study, general scientific research methods were used - deduction and induction, synthesis and analysis, scientific abstraction, systematic approach; specifically - legal methods of cognition - formally legal; legal forecasting, retrospective and comparative-legal method; methodological substantiation of the essence, nature, and structure of terminology, which is the object of research. The study showed the existing versatility of classifications in the world, and the author proposed, on the basis of existing classifications, his own vision for grouping the objects of research of "cryptocurrency" into four groups: DFT-gaming, DFT-prepaid, DFT - national currency, DFT - interethnic currency.

Keywords: classification, cryptocurrency, bitcoin, stablecoin, token, digital currency, virtual assets, private currency, alternative money.

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1. Introduction

Modern digital technologies have created the basis for the formation of a fundamentally new environment of legal regulation, penetrating into a wide variety of areas of human activity. A fundamentally new technological environment based on digital technologies significantly affects various spheres of life, such as financial, political, social, and other. Such a powerful influence of the modern "digital revolution" began to extend to the formation of the relevant norms of national legislation, which led to the adoption of the Law of Ukraine "On Virtual Assets".

Digital technologies have different natures of origin, which creates their heterogeneity and generates the specifics of the legal relations in which they find coverage, because of their peculiarities. It is important and extremely relevant, based on the nature of their origin and existing properties, to formulate a proper classification of existing elements of digital technologies, in particular in an environment where they have a super-powerful influence - the financial sector of the world economy.

1.2. Literature review

The Parliament of Ukraine adopted on 17.02.2022 the Law of Ukraine "On Virtual Assets" No. 2074-IX (hereinafter - the Law 2074)[1], which was signed by the President of Ukraine on 15.03.2022. With a worthy paragraph 1 of Section VI "Final and Transitional Provisions" Law in 2074, the law itself will enter into force: a). from the date of entry into force of the Law of Ukraine On Amendments to the Tax Code of Ukraine regarding the peculiarities of taxation of transactions with virtual assets; б). implementation of the State Register of Service Providers Related to the Turnover of Virtual Assets, as further specified in Paragraph 2 of Title VI Final and Transitional Provisions, as restrictions on the possibility of applying the sanctions provided for in Article 23 of Law 2074. In order to comply with the provisions of paragraph 1 of Section VI of Law 2074 and in order to put it into effect, the Parliament of Ukraine on 13.03.2022 registered the draft law No. 7150 "On Amendments to the Tax Code of Ukraine on Taxation of Transactions with Virtual Assets" (hereinafter referred to as Draft Law No. 7150) [2] [3].

1.3. The purpose of the article

The study is aimed at trying to form a classification of the latest elements of digital technologies that have more found their application in the financial sector of the economy and have the common well-known name «cryptocurrency». In the study, we call them digital financial technologies (hereinafter referred to as DFT). And to form their general classification, on the basis of their inherent characteristic features. The

purpose of the article is not how much to present the classification of virtual assets proposed in law 2074, as in the presentation on their background of their existing alternative classification.

1.4. Presentation of methodology

During the study, general scientific research methods were used - deduction and induction, synthesis and analysis, scientific abstraction, systematic approach; specifically - legal methods of cognition - formally legal; legal forecasting, retrospective, and comparative-legal method; methodological substantiation of the essence, nature, and structure of terminology, which is the object of research.

2. The results of the study

From the very beginning, we note that in determining the classification of the latest technologies in the financial sphere, it is necessary to take into account that they can be divided into groups and classes, each of which may already have its own classification in certain areas, and the author does not claim to be fully classified to a probably lower level.

2.1. Classification of virtual assets according to the Law of Ukraine "On Virtual Assets"

[1], In the first paragraph, the first article "Definition of terms", section I "General provisions" of the Law 2074, the concept of a virtual asset secured by a virtual asset and an unsecured virtual asset is given. And article 4 "Legal status of virtual assets" of Law 2074 directly proposed the distribution of virtual assets for a secured virtual asset and an unsecured virtual asset:

- *virtual asset* - an intangible benefit that is the object of civil rights, has value, and is expressed by the totality of data in electronic form. The existence and turnover of a virtual asset are ensured by the system of ensuring the turnover of virtual assets. A virtual asset may certify property rights, in particular, the right of claim to other objects of civil rights (paragraph 1 of paragraph 1 of Article 1 of Law 2074);

Virtual assets are intangible goods, the peculiarities of the turnover of which are determined by the Civil Code of Ukraine and this Law. Virtual assets may be unsecured or secured. (Paragraph 1 of Article 4 of the Law 2074);

- *secured virtual asset* - a virtual asset certifying property rights, in particular, the rights of claim to other objects of civil rights (paragraph 3 of paragraph 1 of Article 1 of Law 2074); secured virtual assets certify property rights, in particular, the rights to claim other objects of civil rights (paragraph 3 of Article 4 of Law 2074);
- *unsecured virtual asset* is a virtual asset that does not certify any property or non-property rights (paragraph 6 of paragraph 1 of Article 1 of Law 2074); unsecured virtual assets of property rights are not certified. (Paragraph 2 of Article 4 of law 2074).

The secured virtual asset, in turn, based on paragraph 6 of Article 4 of Law 2074, forms separate, two directions of its internal classification (distribution): financial virtual asset and other.

A financial virtual asset, in turn, forms two more separate directions of its internal classification (distribution). Secured by currency values and secured by securities or a derivative financial instrument (paragraph 6 of Article 4 of the Law 2074):

- issued by a resident of Ukraine secured a virtual asset secured by currency values;
- issued by a resident of Ukraine secured a virtual asset secured by a securities or derivative financial instrument.

This is the classification of virtual assets proposed by Ukrainian legislators in Law 2074. In the future, consider alternative variants of classifications of cryptocurrencies that exist in the world.

2.2. Classification of DFT on the basis of conversion

Groups develop financial measures to combat money laundering, in their report "Virtual Currencies. Key definitions and potential risks in the field of prevention and counteraction to legalization (laundering) of proceeds from crime, terrorist financing, financing of proliferation of weapons of mass destruction and corruption", it is proposed to divide the virtual currency into two main types: convertible and non-convertible virtual currency. Although in this document the terms "unconverted" and "closed", as well as "convertible" and "open", are used as synonyms, it should be emphasized that the mention of "convertible currency" in no way implies its official convertibility (for example, as in the case of the gold standard), but only indicates its actual convertibility (for example, due to the availability of the relevant market). Thus, the virtual currency is "convertible" only as long as some of the participants offer agreements with it, and others accept them because its "convertibility" is in no way guaranteed by law.

A convertible (or open) virtual currency has an equivalent value to real currency and can be exchanged for real currency and back again. Examples of convertible virtual currency are Bitcoin (Bitcoin); E-gold (Electronic Gold - no longer exists); Liberty Reserve (Liberty Reserve - no longer exists); Second Life Even Dollars (Lynden Dollars in the game "Second Life"); and Webmoney. [4]

An unconverted (or closed) virtual currency is intended for use in specific virtual spheres or worlds, such as global multiplayer online role-playing games or an Amazon.com store, and which, according to the rules governing its use, cannot be exchanged for fand currency. Examples of unconverted virtual currency are Project Entropia Dollars (Dollars in the game "Project Entropia"); Q Coins (Кью Коінс); і World of Warcraft Gold (Gold in the game "World of Warcraft"). It should be noted that even if, under the conditions established by the administrator, the non-convertible currency can be officially used only in a particular virtual world and is unconverted, it is possible to create an unofficial additional black market, in which there are

opportunities for exchanging "unconverted" virtual currency for fand currency or other virtual currency. Of course, the administrator applies sanctions (including the cancellation of the player's account and/or confiscation of the remaining virtual currency) to the existing one sand, which tries to create or use the black market in violation of the established rules for the use of currency. The development of a stable black market of a particular "unconverted" virtual currency can in practice lead to the transformation of such a currency into a convertible virtual currency. In this regard, the characteristic of "non-convertibility" is not necessarily permanent and unchanged. [4]

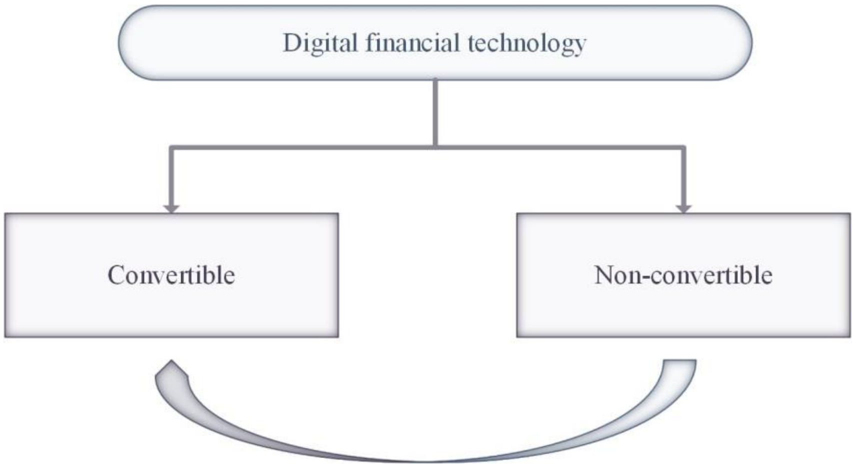


Figure 1. Classification of DFT on the basis of their conversion

2.3. Classification of DFT by type of technological platforms for placement

The Financial Anti-Money Laundering Action Group (FATF) understands the following distribution that all non-convertible virtual currencies are centralized: by definition, their issue is carried out by the central administrator, who establishes rules limiting their convertibility; but unlike non-convertible virtual currencies, convertible virtual currencies divided into centralized and decentralized.

In centralized virtual currency systems, there is a single administrator, that is, a person (third party) who controls the system. The administrator issues currency establishes rules for its use, maintains a centralized register of payments, and has the right to withdraw currency from circulation. The exchange rate of the convertible virtual currency can be either floating, that is, determined by market supply and demand for virtual currency, or fixed, that is, tied by the administrator to a given value in fondant currency or other values used in the "real world", such as gold or currency basket. At this time, the vast majority of payment transactions in virtual currency use centralized virtual currencies. Examples of such currencies are E-gold (no longer exists); Liberty Reserve dollars/euros (No longer exist); Second Life Linden Dollars (Linden Dollars in the game "Second Life"); Perfectmoney; WM units (Unit WebMoney) i World of Warcraft Gold (Gold in the game "World of Warcraft").[4]

Decentralized virtual currencies (also called cryptocurrencies) are distributed, based on the mathematical principles of are opensource virtual currencies that do not

have a central administrator and there is no centralized control or supervision. Examples are Bitcoin, Litecoin i Ripple. [4]

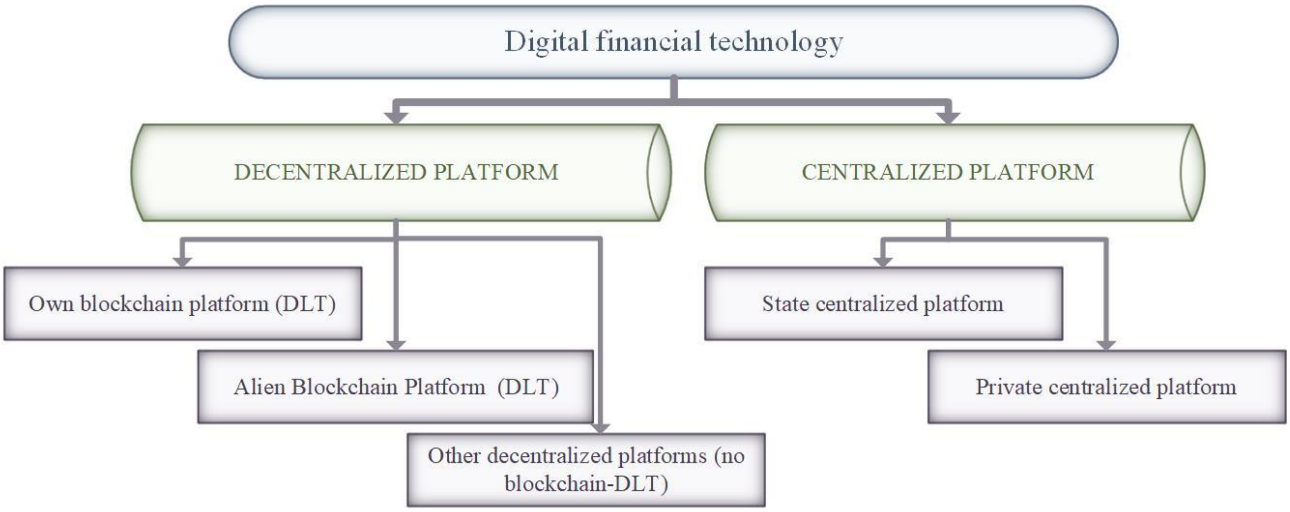


Figure 2. Classification of DFT by type of technological platforms for their placement

2.4. Classification of DFT by the method of formation (emission)

Speaking about the types of cryptocurrencies by the method of formation, let's remember Fork. - offshoot). Many popular cryptocurrencies, including bitcoin, USDT, BCH, and others, are Fork bitcoin. The fork is a clone of cryptocurrency y clone, its branch and modified copy, a situation where the software code of a particular project is used to run another. There are two types of Fork: Soft Fork i Hard Fork [5], [6]

As practice shows, as a result, Fork most often changes emissions, mining rewards, and mining algorithms. But there are other changes. The type of Fork depends on them and whether developers and most miners support such an update. [5]

Hard Fork is a change in cryptocurrency software code that is not compatible with the previous version. In this scenario, nodes that have not been updated will not be able to process new transactions and create new blocks. If there are any differences regarding the restoration, then the protocol is divided. There are two blockchains and a new cryptocurrency. The new network will have its blockchain and its history with its developers. In fact, Hard Fork is radical in changing the program code. There is no backward compatibility with respect to the old program code. The most famous cryptocurrencies that appeared as a result of Hard Fork are Bitcoin Cash, Bitcoin Gold, Bitcoin Diamond, Litecoin, Ethereum Classic. [5], [6]

Soft Fork is a change in cryptocurrency software code that is quite compatible with its previous version. At the same time, non-updated nodes can conduct transactions and create new blocks in the blockchain. However, they should not violate the foundations of the new protocol. Soft Fork assumes only minor changes in block generation. As a result, no replacement of software or wealth is required. [5], [6]

The main difference between Soft Fork and Hard Fork is that the former does not imply any fundamentally new solutions, an offshoot of the network, or the emergence of new cryptocurrencies. In turn, Hard Fork occurs when the code after software recovery cannot work with the old code on the same blockchain. The main differences between Fork are most often the speed of issue of cryptocurrencies and their encryption algorithms. Since the advent of BTC, quite a lot of its Hard Fork has been made. As practice has shown, most of them are practical and in this regard do not gain much popularity. Soft Fork is more popular because they are more likely to have real benefits. [5]

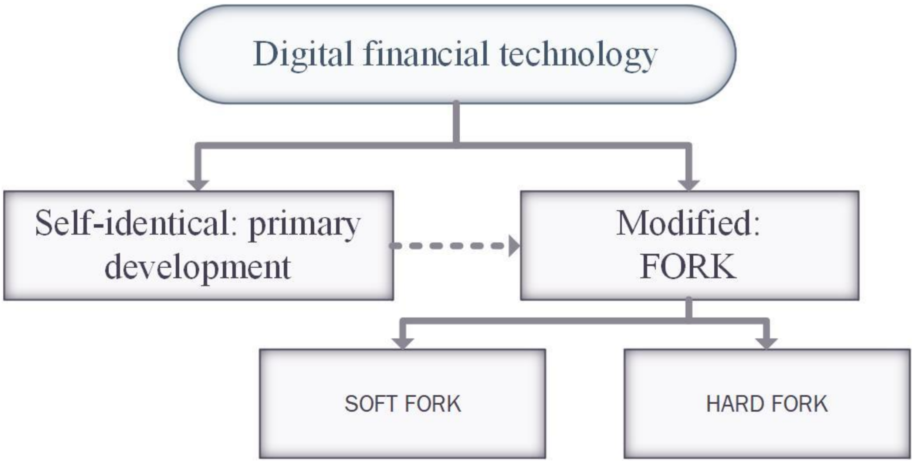


Figure 3. Classification of DFT by the method of formation

2.5. Classification of DFT by the nature of emission

Why does cryptocurrency appear, we will try to answer this question before we begin to classify such a concept as "emission". Bitcoins are generated by so-called miners, who are blockchain platform users, by installing on their computers a special program through which complex mathematical calculations are performed, and for which they receive a certain reward. [7]

Blockchain allows you to store transactions in a distributed ledger in the form of a sequential chain of blocks. From there, they come to miners - members of the network who confirm operations. To do this, select a «hash» - encrypted number containing information about the amount and time of each transaction, addresses of the sender, recipient, and other parameters. There is a random ingredient in this set of digits. To determine it, miners sort through millions of options. When «hash» is found, the transaction block is automatically closed. New coins appear at the time of confirmation of the operation. Whoever first picks up the hash with the specified parameters receives a reward. [8]

Thus, miners perform 2 tasks at once: they support the functioning of the payment system (after all, without new blocks it will become incapacitated) and ensure the systematic emergence of new coins.. [9]

Note the general feature of the issue of tokens, so instead of mining tokens, as a rule, are immediately issued in full emission [10]. Some coins (for example, Rypple) are issued centrally. In such cases, mining is not carried out. As a rule, a digital asset produced by a single center is only a by-product of the payment system of the same name. The same Rypple Labs intend to introduce revolutionary solutions into the banking sector, while the XRP coin will only play the role of a kind of payment bridge. [9].

The issue of cryptocurrency in the generally accepted concept is divided into three types: limited one-time, limited controlled, and unlimited controlled.

Limited one-time. With such an issue, the cryptocurrency is issued immediately in full. Here the most striking example is the above-mentioned Rypple. The creators immediately released 100 billion. Coins. This value is final; Coins will not be mined and will no longer be. In addition to Rypple, this category includes assets such as NEM (XEM - 9 billion) and Cardano (ADA - 45 billion). The main advantage of a single-issue cryptocurrency is that coins are practically not subject to inflation due to the excess of supply over demand. In addition, it is profitable to invest in such Coins in the early stages of their existence, that is, you can buy a cryptocurrency when it costs a penny, and after a while sell it at a more favorable rate if it grows. However, it should be remembered that the price increase will depend not so much on the popularity of the digital asset, but on the success of the payment system, inside which it "walks". And even in this case, a solid profit is not guaranteed. The same System Rypple is actively popularized and finds supporters in the financial sector, but the value of XRP coins is still far from attractive. [8], [9]

Limited controlled. According to this principle, almost all the most popular digital money is produced: Bitcoin (BTC) (and Fork), Lite-coins (LTC), and DASH. Limited controlled emission is carried out at the expense of mining. New coins come into circulation gradually, while their total number may not exceed the predetermined limit (21 million BTC, 84 million LTC, 19.8 million DASH). That is, when the last Bitcoin coin is mined, its mining will stop. A similar fate awaits other coins with limited emissions. According to preliminary estimates, the last BTC will be mined only in 2140. Such a long period is due to the presence of regulatory tools prescribed when creating a payment system. [8], [9]

Unlimited controlled. Already by name, it is clear that there is no limit on the total number of coins here, although the release regulators are present. The considered category of notaries is also produced with the help of mining, so not a single center is responsible for the release, but thousands of individual users. The most popular representatives of crypto assets with unlimited emission are Ethereum, Ethereum Classic, and Dogecoin. The main advantage of payment systems, inside which the coin data "walks", are fast transactions. For example, many traders replenish balances on the exchanges in Dogecoin and only then change them to the desired currencies. This is more convenient than immediately starting on the account of Bitcoin or Litecoin. However, the unlimitedness of digital money has a very negative impact on their price. [8], [9]

There are two main algorithms for creating cryptocurrencies today: Pow, or Proof-of-work. According to this principle, they are mined (miners) Bitcoin, Litecoin, Monero, and Ethereum. And the second algorithm is denoted by the abbreviation Pos or Proof-of-stake. Such coins usually have only one issue. They are treated by altcoins such as Ripple (XRP), Stellar (XLM), Cardano, and EOS. The main task of each of these two algorithms is to verify the correctness of transactions. This is necessary so that the system has a guarantee that the coin will get from the sender to the recipient, and that errors do not accumulate in the system.

Based on the research on the issue of cryptocurrencies, on the basis of the presented material, we offered our vision of its classification. Emission is divided into two main types: calculated (mathematical) and non-calculated (standard release); and each type is divided into limited and not limited.

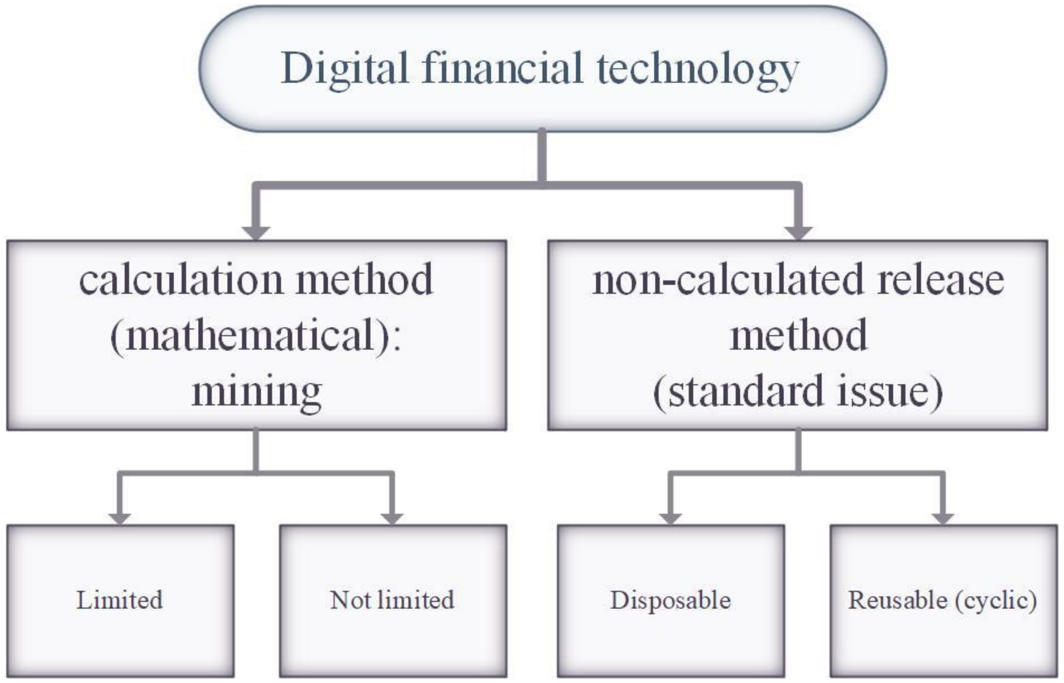


Figure 4. Classification of DFT by the nature of emission

2.6. Classification of DFT on the basis of ensuring their cost

For a more voluminous form of perception of a multifaceted object in a study, such as a cryptocurrency, we will conduct its groups with their simultaneous classification.

O. Dudykova adheres to the complex definition of the DFT object under study as digital financial assets (hereinafter referred to as DFA), and gives a classification depending on the nature of ensuring their value: 1) DFA as a gaming crypto asset in, the value of which is based on social trust; 2) DFA with the function of a prepaid financial product, the value of which is represented by their provision (a new generation cashless payment tool); 3) DFA as a legal means of payment, the value of which is guaranteed by the state. [11]

In general, we agree with this interpretation, but we believe that won't be comprehensive. And in our opinion, it can be supplemented based on an unquestionable and generally accepted global trend in the processes of globalization - at least the fourth element: DFT/DFA as a legitimate payment method, the value of which is guaranteed by several countries or the association of countries (as an option, by their DFT central banks).

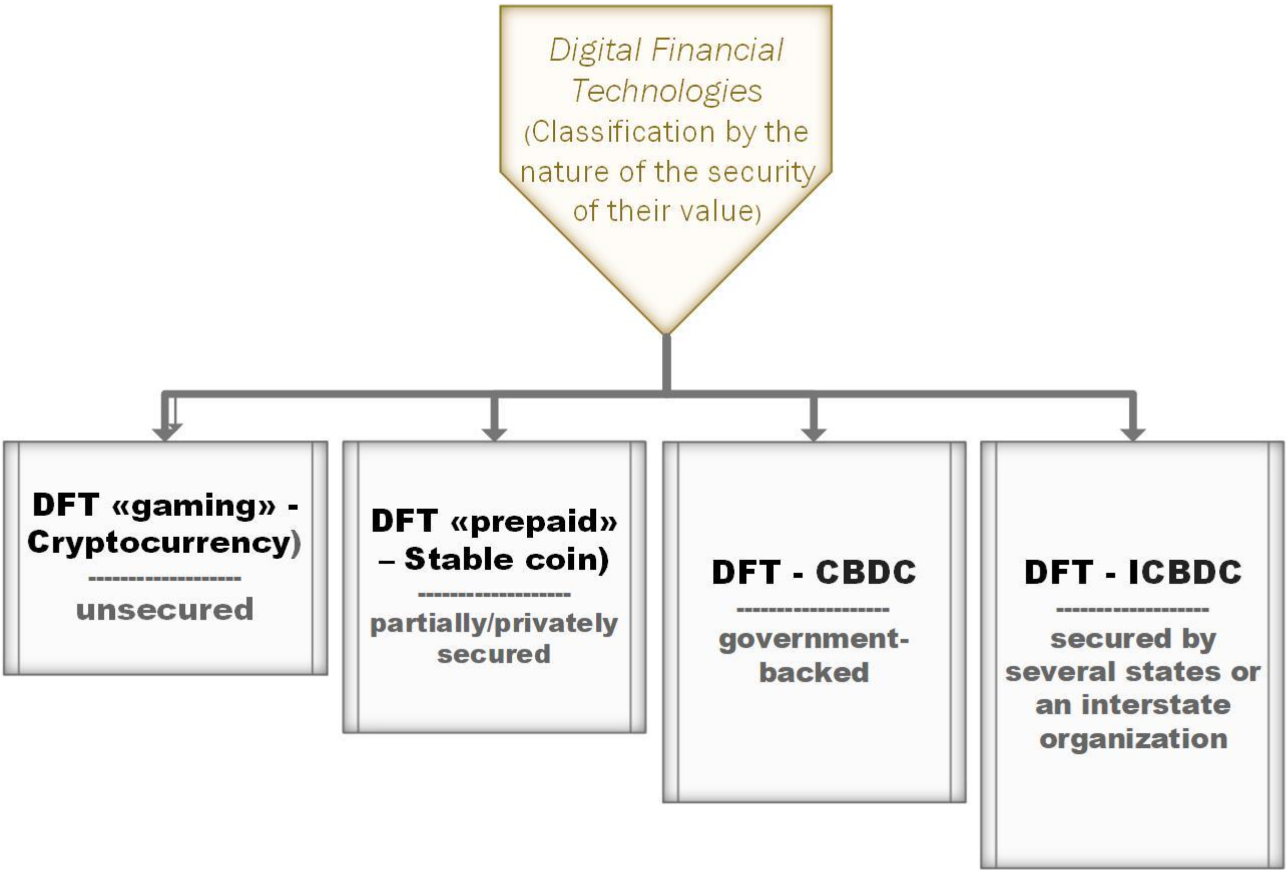


Figure 5. Classification of DFT based on ensuring their cost

DFT - Cryptocurrency. We include the so-called "cryptocurrencies" in the so-called "cryptocurrencies". bitcoin, "coins", "altcoins", as well as "tokens", which have no real security of their value.

It should be noted that the lack of collateral causes strong volatility and the course of crypto-active, which is determined not by its purchasing power, but by supply and demand for it. [12]. At the same time, demand is mainly speculative in nature. [13]. For example, in the period from April 2021 to May 2021, the rate of one coin would vary from 33 thousand to 63 thousand US dollars, which in general was determined by psychological moods under the influence of information noise. The value of this type of DFA / DFT is based on economic expectation rather than the availability of real assets, but there is no institution that can single-handedly affect their main characteristics: the rate of the issue and the course of [14]. The issuer of digital financial

assets as a gaming crypto asset is not a specific person or organization, but participants in the system itself. [15].

V. Usosky, it is believed that modern " cryptocurrencies are just digital goods that are not able to perform the functions of credit money, and unlike gold, they are lowly liquid and highly volatile. ... Bitcoin has no business process, but there is a game bubble ..."[16]. At this time, the process of creating a cryptocurrency is a game, in the process of which its accounting units are mined, and the cryptocurrency itself is a virtual "goods" that a group of people collects, and in the future can sell or exchange it for another good or service, provided there is a party, agree to do such an operation. The cryptocurrency market in its modern guise is a long-running Ponzi scheme [17].

As we understand DFT - Cryptocurrency is one of the first developments in the field of fintech and is a training financial and technological platform for the development of the next classes. Even though today they are actively trading on exchange platforms, and the turnover reaches billions, - most DFT - cryptocurrencies will remain in oblivion or will tend to go to the "dark side".

DFT - Stablecoin. Among them, we include the so-called "stablecoins", which are provided not by state bodies, but by private individuals and corporations. For the most part, DFT - Stablecoin, in contrast to DFT - Cryptocurrency, can be attributed to the so-called "private money".

According to O. Dudykova, the DFT - Stablecoin security approach assumes that, unlike traditional money, the monetary value of which is established by law, the monetary value of DFA is represented by their security. The exchange of digital financial assets for legal money is the only condition for obtaining their monetary value outside the digital system. The prepaid nature automatically excludes DFA from the economic category of "money" and combines them into one group with instruments used in non-cash settlements: they are informative in nature, providing information on the availability and transfer of ownership rights to legal money, which acts as their security [11].

Digital financial assets, having no intrinsic value and not being the final legal means of payment, do not act as an independent representative of value (their value is represented by the security previously provided to the operator of the digital system) and, accordingly, are not able to perform the function of debt repayment, requiring final settlements. Therefore, it is practically impossible to implement a payment with digital financial assets, the scheme of which excludes the participation of a credit organization, since its completion must be the fulfillment of a monetary obligation by the operator of the digital system by exchanging digital financial assets for an equivalent deposited amount of legal money. However, carrying out a transaction, including one of a credit nature, or carrying out non-commodity transactions using DFA represents an exchange of goods (works, services) for a monetary obligation of the operator of the digital system, which is later repaid with legal money as a means of payment. In this case, digital financial assets fully perform the function of a means of settlement: the seller receives not the fulfillment of a monetary obligation by the buyer, but the transfer of a monetary obligation of a third party [18].

The considered approach does not endow digital financial assets with the status of "legal tender", as a result of which they perform limited monetary functions, the study of which is devoted to the study of a large number of works, implementing them only within the framework of a specific digital system, and represent a private medium of exchange that may not be recognized as a certain circle of people [19].

One of the main characteristics of digital financial assets is the mandatory definition of the circle of persons who adopt them as a means of exchange. Unlike legal money, which is accepted unconditionally and unconditionally by everyone, always, and everywhere (within a certain country), the recognition of digital financial assets is not by the law, but by a contract with the operator of the digital system. Being a prepaid financial product, DFAs should have the property of multi-purpose use. And if not, then, with single-purpose use, they "will not provide new information of a monetary nature, but, rather, will testify to a simple exchange of information, about the number of purchases that agent A has the right to make" [20].

The above position in terms of its economic nature coincides with the opinion of the famous economist P. Samuelson, expressed back in the 90s of the last century, according to which settlement and payment instruments, for example, checks "reflect only expenses or transfers of money; the money itself is quantitatively the essence of a deposit" [21].

DFT - CBDC. The given abbreviation CBDC has the full text in the form of Central Bank Digital Currency. From the long-established name in scientific circles, it can be understood that this class of DFT is issued by the central banks of individual states, and therefore is a fully secured digital currency, which is essentially the embodiment of fiat money, only not on the usual metal or paper medium, but in in the form of a certain set of numbers. This type is easily exchanged for the types of fiat money we are used to, and at the same time in both directions.

The tool for cashless payments became an indicator of the need to transform the traditional system of cashless payments and payments, which demonstrated the inability of electronic banking systems to meet the needs of the information society [22].

Within the framework of the monetary approach existing in scientific circles, three views on the monetary essence of the DFT - CBDC class are possible:

1) DFT is an analog of cash (M. Berezyna [23], S. Anureev [24], P. Egiazaryan [25], S. Kvashnin [26], A. Shangin [27] other.);

2) DFT is an analog of non-cash funds (A. Selishchev [28], V. Usoskin [29], V. Yurovytskyi [30] other.);

3) DFT is a new form of money (V. Aksyonov [31], E. Horyukov [32] , M. Isaev [33], G. Narikov [34] other.).

But we are supporters of the fourth option, which boils down to the theory of a gradual and complete replacement of cash by DFT - CBDC, which will occur through their primary kinship, with full subsequent replacement. This statement is based on the author's internal understanding of the studied material on this topic.

DFT is the international digital currency of central banks (DFT - ICBDC). At the time of writing, none of this DFT class has been registered yet. But the author of the work is convinced that this is the reality of the near future of our civilization. And even though such united DFTs will not have a single character and will be formed based on already existing global banks and funds, as well as on the background of political associations and unions. But in general, the trend of this class of DFT will tend in the future to merge to a small number, two or three.

3. Conclusions

Classification of elements of digital technologies has been formed that is more reflected in the financial sector of the economy, based on the characteristics that are inherent in them. Ta has a common well-known name "cryptocurrency" when the study was referred to as digital financial technology (DFT) against the background of the existing classification of virtual assets existing in law 2074. The study showed the existing versatility of classifications in the world, and the author proposed, on the basis of existing classifications, his own vision for grouping the objects of research of "cryptocurrency" into four groups: DFT – gaming, DFT – prepaid, DFT – national currency, DFT – interethnic currency.

References:

1) *Про віртуальні активи*. 2022. URL: https://zakon.rada.gov.ua/go/2074-20 (Access: 15, April 2022).
2) «Проект №7150 Закону Про внесення змін до Податкового кодексу України щодо оподаткування операцій з віртуальними активами». 13, Березень 2022. URL: https://itd.rada.gov.ua/billInfo/Bills/Card/39211 (Access: 15, April 2022).
3) «Порівняльна таблиця до Проекту №7150 Закону України ‘Про внесення змін до Податкового кодексу України, щодо оподаткування операцій з віртуальними активами’». 13, March 2022. URL: https://itd.rada.gov.ua/billInfo/Bills/pubFile/1245233 (Access: 17, April 2022).
4) FATF, «Отчет ФАТФ. Виртуальные валюты. Ключевые определения и потенциальные риски в сфере ПОД/ФТ», FATF, Франция. Париж, июнь, 2014. URL: https://eurasiangroup.org/files/FATF_docs/Virtualnye_valyuty_FATF_2014.pdf (Access: 12, April 2022).
5) «Виды форков криптовалют», *Новости Германии: последние события на русском языке*, 28, February 2022. URL: https://aussiedlerbote.de/2022/02/vidy-forkov-kriptovalyut/ (Access 13, April 2022).
6) А. Акопян і Т. Макей, «Виды криптовалют: обзор биткоина, альткоинов и токенов», 17, Грудень 2021. URL: https://currency.com/ru/vidy-kriptovalyut-obzor-bitkoina-altkoinov-tokenov (Access 12, April 2022).

7) «Эмиссия криптовалют». URL: https://blockchaindesk.ru/cryptocurrency/emissija-kriptovaljut (Access 13, April 2022).
8) «Эмиссия криптовалюты — что это, как происходит выпуск новых монет в блокчейне», *Crypto.ru*, 30, March 2022. URL: https://crypto.ru/emissiya-kriptovalyuty/ (Access 13, April 2022).
9) «Что такое эмиссия в криптовалюте?», *Обзор техники, электроники и криптовалюта*, 09, November 2018. URL: https://tehnoobzor.com/cryptolife/o-kriptovaljutah/2701-chto-takoe-emissiya-v-kriptovalyute.html (Access 13, April 2022).
10) «Виды криптовалют - какие существуют и чем отличаются | Блог Binance», *Binance*, 22, October 2021. URL: https://www.binance.com/ru/blog/all/%D0%B2%D0%B8%D0%B4%D1%8B-%D0%BA%D1%80%D0%B8%D0%BF%D1%82%D0%BE%D0%B2%D0%B0%D0%BB%D1%8E%D1%82--%D0%BA%D0%B0%D0%BA%D0%B8%D0%B5-%D1%81%D1%83%D1%89%D0%B5%D1%81%D1%82%D0%B2%D1%83%D1%8E%D1%82-%D0%B8-%D1%87%D0%B5%D0%BC-%D0%BE%D1%82%D0%BB%D0%B8%D1%87%D0%B0%D1%8E%D1%82%D1%81%D1%8F-421499824684902939 (Access 12, April 2022).
11) Е. Дюдикова, «Методология и инструментарий формирования единого платежного пространства и интеграции цифровых финансовых активов в международные расчетные системы», дис. на соискание научн. степени доктора економ. наук, ФГАОУ ВО «Северо-Кавказский федеральный университет», Ставрополь, 2021.
12) А. Генкин і А. Михеев, *Блокчейн: Как это работает и что ждет нас завтра*. Москва: Альпина Паблишер, 2018.
13) J. Bouoiyour i R. Selmi, «What Does Crypto-currency Look Like? Gaining Insight into Bitcoin Phenomenon», *MPRA Paper*, 26, August 2014. URL: https://mpra.ub.uni-muenchen.de/58133/ (Access 27, March 2022).
14) В. Л. Достов, П. М. Шуст, «Виртуальные валюты и криптовалюты: новые возможности или новые риски?», *Финансовая безопасность*, вип. 3, с. 61–64, 2013.
15) М. С. Марамыгин і М. Л. Терешкин, «Виды и особенности майнинга современных денежных суррогатов - криптовалют», *KANT*, вип. 4 (25), с. 214–219, 2017.
16) В. Н. Усоский, «Криптовалюта как техногенный миф», *Банковский вестник*, вип. 4 (669), с. 35–48, 2019.
17) P. Krugman, «Opinion | Technobabble, Libertarian Derp and Bitcoin», *The New York Times*, 20, April 2021. Access: 27, March 2022. URL: https://www.nytimes.com/2021/05/20/opinion/cryptocurrency-bitcoin.html
18) Е. И. Дюдикова і Н. Н. Куницына, «Развитие электронных денег в системе безналичных расчетов», Екатеринбург, 2017, с. 91–97.

19) Н. Ю. Танющева і Е. И. Дюдикова, «Электронные деньги через призму денежных функций», *Финансы и кредит*, вип. 16, с. 40–49, 2016.
20) Д. А. Кочергин, «Рынок электронных денег в России: структура и особенности функционирования», Санкт-Петербург, 1999.
21) П. Самуэльсон, *Экономика: пер. с англ*. Москва: Алгон: Машиностроение, 1997.
22) N. Kunitsyna і E. Dyudikova, «Electronic Money in the National Payment System: regional aspect», Трав 2018, с. 321–325. DOI: 10.2991/cssdre-18.2018.68.
23) О. И. Лаврушина, Ред., *Деньги, кредит, банки*, 4ий-е изд. вид. Москва: КНОРУС, 2010.
24) С. В. Ануреев, «Проблема сущности безналичных денег», *Бизнес и банки*, вип. 24, с. 1–3, 2002.
25) Ш. П. Егиазарян, «Электронные деньги в современной системе денежного оборота», Москва, 1999.
26) С. С. Квашинин, «Использование электронных денег в налично-денежном обороте», Нижний Новгород, 2004.
27) А. А. Шангин, «Электронные платежные системы в сфере розничных расчетов», Санкт-Петербург, 2003.
28) А. С. Селищев, *Деньги. Кредит. Банки*. Санкт-Петербург: Питер, 2007.
29) В. М. Усоскин, *Теория денег*. Москва: Мысль, 1976.
30) В. М. Юровицкий, *Денежное обращение в эпоху перемен: Научно-практ. пособие*. Москва: ГроссМедиа. РОСБУХ, 2007.
31) В. С. Аксенов, «К вопросу об интерпретации электронных денег», *Вестник Российского государственного гуманитарного университета*, вип. 10, с. 14–22, 2011.
32) Е. В. Горюков, «Электронные деньги: анализ практики использования и прогноз развития», Иваново, 2004.
33) М. Е. Исаев, «Оценка развития электронных денег при осуществлении розничных платежей», 2013.
34) Г. Нариков, «Общегосударственная платёжная система и развитие электронных носителей денег», кандидат экономических наук, Хабаровская государственная академия экономики и права, Хабаровск, 2001.